

# Two-vehicle charging-window worksheet

Energy planning only. Not electrical design, installation instructions, capacity approval or a rebate calculation. A qualified contractor must validate actual capacity, certified compatible equipment, controls, losses and required approvals. Do not change wiring or bypass controls using this example.

| Vehicle | Arrival | Departure | Energy required from supply | Maximum vehicle acceptance / constraint |
|---------|---------|-----------|-----------------------------|-----------------------------------------|
| A       |         |           |                             |                                         |
| B       |         |           |                             |                                         |

Supply-side energy must include an appropriate allowance for charging losses; do not add losses again if already included. Record whether quoted power is a guaranteed minimum or an upper limit that other loads can reduce.

## Worked comparison

Hypothesis: total 6 kW continuously available to these vehicles; both can accept 6 kW; all stated energy is from the supply; no interruptions or ramp-up loss beyond included needs. A is present 22:00-08:00 and needs 18 kWh; B is present 22:00-02:00 and needs 20 kWh. These are not typical consumption or electrical specifications.

| Arrangement                                      | Car B by 02:00                            | Car A result                                            | What must be verified                                          |
|--------------------------------------------------|-------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------|
| Equal 3 kW each while both charge                | 12 kWh; 8 kWh short                       | 12 kWh by 02:00; remaining 6 kWh at 6 kW finishes 03:00 | Actual sharing behavior and ability to allocate freed capacity |
| Approved prioritization gives B 6 kW then A 6 kW | 20 kWh by 01:20                           | Starts 01:20; 18 kWh finishes 04:20                     | Actual certified equipment/control can perform this schedule   |
| B's window shrinks to 22:00-00:00                | At most 12 kWh even if all 6 kW goes to B | A's later window cannot fix B's deadline                | Different capacity/window/other charging needed                |

Priority illustration, not a switching instruction:

22:00 ----- 01:20 ----- 04:20 ----- 08:00  
B: 6 kW x 3h20m      A: 6 kW x 3h      unused here  
= 20 kWh              = 18 kWh  
B leaves by 02:00      A leaves 08:00

Equations: energy (kWh) = power (kW) x hours; time = energy / power. Combined demand of 38 kWh is below 60 kWh over 10 hours, but that does not prove each departure deadline can be met.  $20 / 6 = 3 \frac{1}{3}$  hours = 3 h 20 min;  $18 / 6 = 3$  hours. Equal sharing gives B  $3 \times 4 = 12$  kWh, with a shortfall of  $20 - 12 = 8$  kWh. The two-hour maximum is  $6 \times 2 = 12$  kWh.

## Compare contractor-supported options

| Question                                       | Existing charger plus compatible addition | Managed replacement / shared system | Different infrastructure upgrade |
|------------------------------------------------|-------------------------------------------|-------------------------------------|----------------------------------|
| Both vehicle deadlines met on a difficult day? |                                           |                                     |                                  |
| Performance when other drivers join?           |                                           |                                     |                                  |
| Existing equipment retained/replaced?          |                                           |                                     |                                  |
| Per-stall work cost                            |                                           |                                     |                                  |
| Shared controls/distribution/service cost      |                                           |                                     |                                  |
| Ongoing energy/software/maintenance            |                                           |                                     |                                  |
| Approval and payment arrangement               |                                           |                                     |                                  |

Attach the actual energy schedule and quote scope. An option remains unresolved until its capacity and permission are evidenced. No score can substitute for a failed departure window.